

# Claims

[c1] 1. An optical mouse comprising:

- a housing, said housing comprising a bottom shell and a top cover shell covering said bottom shell;
- a plurality of operation buttons installed in said top cover shell;
- a circuit board mounted inside said housing;
- a refractor mounted on said bottom shell inside said housing;
- a light emitting element installed in said circuit board and adapted to emit light through said refractor onto a contact surface supporting said housing; and
- a sensor installed in said circuit board and adapted to pick up light from the contact surface supporting said housing through said refractor and to convert received light into electronic signal indicative of direction and distance of said optical mouse;

wherein said refractor comprises a base, said base comprising a recessed receiving chamber adapted to accommodate said light emitting element, a reflection surface adapted to reflect light from said light emitting element onto the contact surface supporting said housing, a light penetrating portion, and a circular arc surface adapted to

focus light from the contact surface supporting said housing onto said sensor through said light penetrating portion; said light emitting element is suspended in said recessed receiving chamber of said refractor and perpendicularly aimed at the base of said refractor.

[c2] 2.The optical mouse as claimed in claim 1, wherein said circuit board has an opening; said sensor is suspended above said opening.

[c3] 3.The optical mouse as claimed in claim 1, wherein said sensor has a signal pickup aimed at the light penetrating portion of said refractor.

[c4] 4.The optical mouse as claimed in claim 1, wherein said bottom shell of said housing comprises a locating portion, and a through hole through said locating portion; said refractor is positioned in said locating portion of said bottom shell, keeping said reflection surface and said circular arc surface aimed at said through hole of said bottom shell.